

## ABSTRACT OF THE DISCLOSURE

The present invention relates to a Ziegler-Natta catalyst for olefin polymerization and a method for polymerization of olefin using the same. Specifically, the invention relates to a Zeigler-Natta catalyst for  
5 olefin polymerization, which is produced by a method comprising the step of reacting a transition metal compound in which the transition metal having an oxidation number of 4 or more is selected from Groups IV, V or VI of the Periodic table and two or more aryloxy ligands are bound to the transition metal, with an organomagnesium compound, to reduce said transition metal compound to a reduced form in which the transition metal has an oxidation number of 3, and a method for polymerization of  
10 olefin using said catalyst.